

Serial No. 09/526,091

B1
¹~~7~~. (Once Amended) A cross-connect waveguide system comprising:
a planar lightguide circuit having one or more optical paths;
a plurality of optical waveguides coupled to said planar lightguide circuit;
a plurality of filtering devices for feeding light energy into said optical paths of said planar lightguide circuit or receiving light energy from said optical paths of said planar lightguide circuit; and

a diverting element for feeding first light energy at a predetermined wavelength having first information content away from said planar lightguide circuit, and for feeding second light energy at said predetermined wavelength having second information content into said planar lightguide circuit, wherein said diverting element is remotely configurable and is controlled with optically encoded information.

B2
³~~11~~. (Once Amended) The cross-connect waveguide system of claim ¹~~7~~, wherein said diverting element is controlled by a dedicated control signal of light energy.

⁴~~13~~. (Once Amended) The cross-connect waveguide system of claim ¹~~7~~, wherein said diverting element is controlled by sampling the first light energy.

Serial No. 09/526,091

²⁶ ~~25~~. (Once Amended) A method for adding and dropping light energy with multiple information contents comprising the steps of:

^{B3}

- feeding multiplexed light energy into a planar lightguide circuit;
- demultiplexing the light energy by dropping first light energy at a predetermined wavelength having first information content from said planar lightguide circuit;
- generating control signals by encoding control information within an optical signal to activate a diverting element to feed the first light energy away from said planar lightguide circuit while feeding second light energy at said predetermined wavelength having second information content into said planar lightguide circuit for multiplexing with light energy in said planar lightguide circuit; and

- generating control signals by encoding control information within an optical signal to de-activate said diverting element to feed the first light energy into said planar lightguide circuit for multiplexing with light energy in said planar lightguide circuit.

[Please insert the following additional claims:

^{B4}

³¹
~~41~~. (New) A cross-connect waveguide system comprising:

- a planar lightguide circuit having one or more optical paths;
- a plurality of optical waveguides coupled to said planar lightguide circuit;
- a plurality of filtering devices for feeding light energy into said optical paths of said planar lightguide circuit or receiving light energy from said optical paths of said planar lightguide circuit; and

- a diverting element for feeding first light energy at a predetermined wavelength having first information content away from said planar lightguide circuit, and for feeding second light energy at said predetermined wavelength having second information content into said planar lightguide circuit, wherein said diverting element is remotely configurable and is controlled by address headers of light energy containing configuration instructions.

³²
~~42~~. (New) The cross-connect waveguide system of claim ³¹~~41~~, wherein said diverting element is controlled by a dedicated control signal of light energy.

Serial No. 09/526,091

Cont. 2
B4
³³
~~43.~~ (New) The cross-connect waveguide system of claim ³¹~~41~~, wherein said
diverting element is controlled by sampling the first light energy.

³⁴
~~44.~~ (New) The cross-connect waveguide system of claim ³¹~~41~~, wherein said
diverting element comprises a double-sided mirror.